

# MAKING WELLINGTON [EARTHQUAKE] RESILIENT: CREATING BUILDING INVENTORY DATASET FOR SEISMIC RISK ASSESSMENT AND MANAGEMENT

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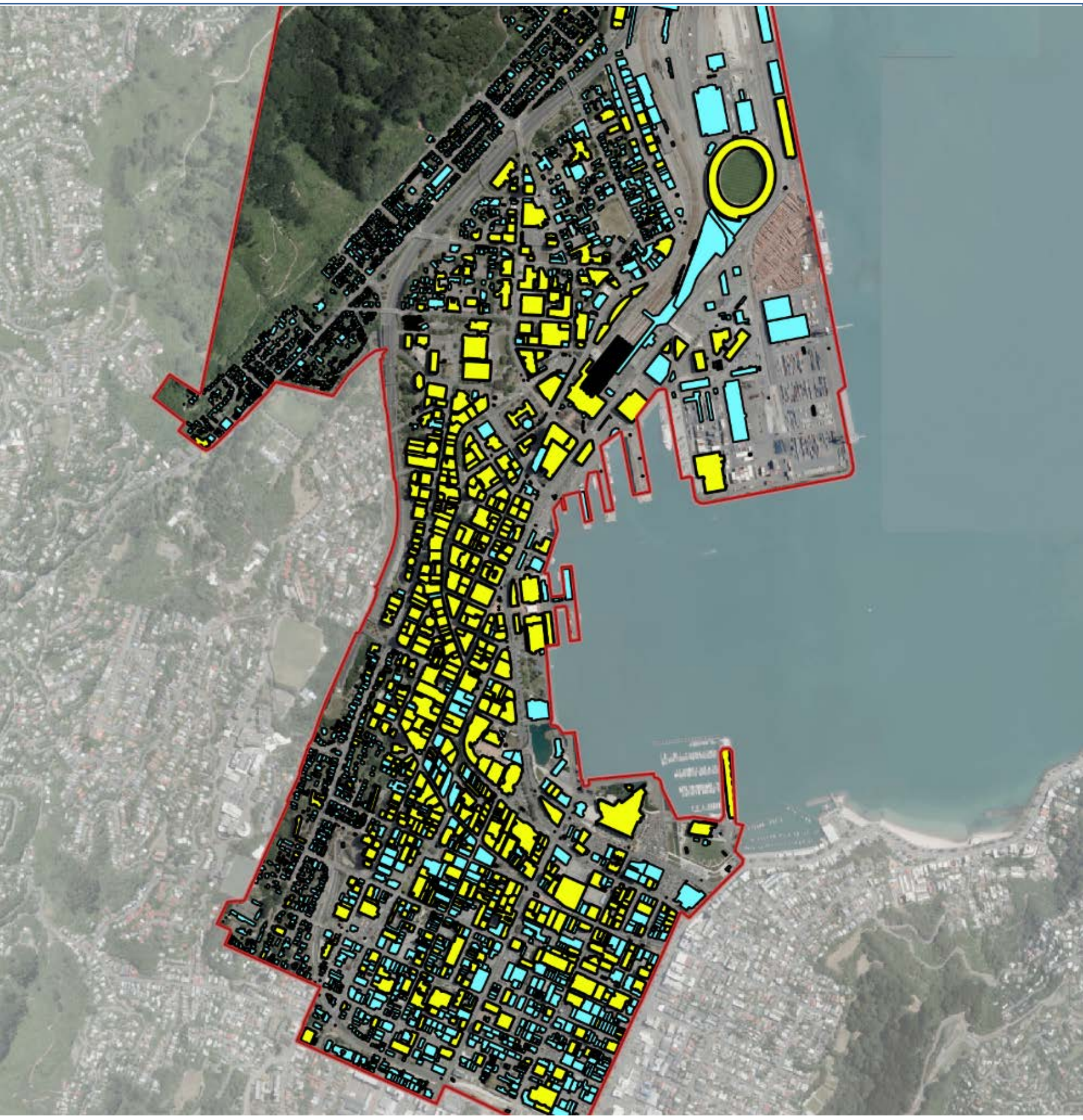


## Project Description

**WHAT:** The building inventory database is created for Wellington CBD in order to assist the generation of research on the risks, impacts, and viable solutions for **reducing the seismic risk** of existing multi-story concrete buildings and aid **emergency response** of the city council.

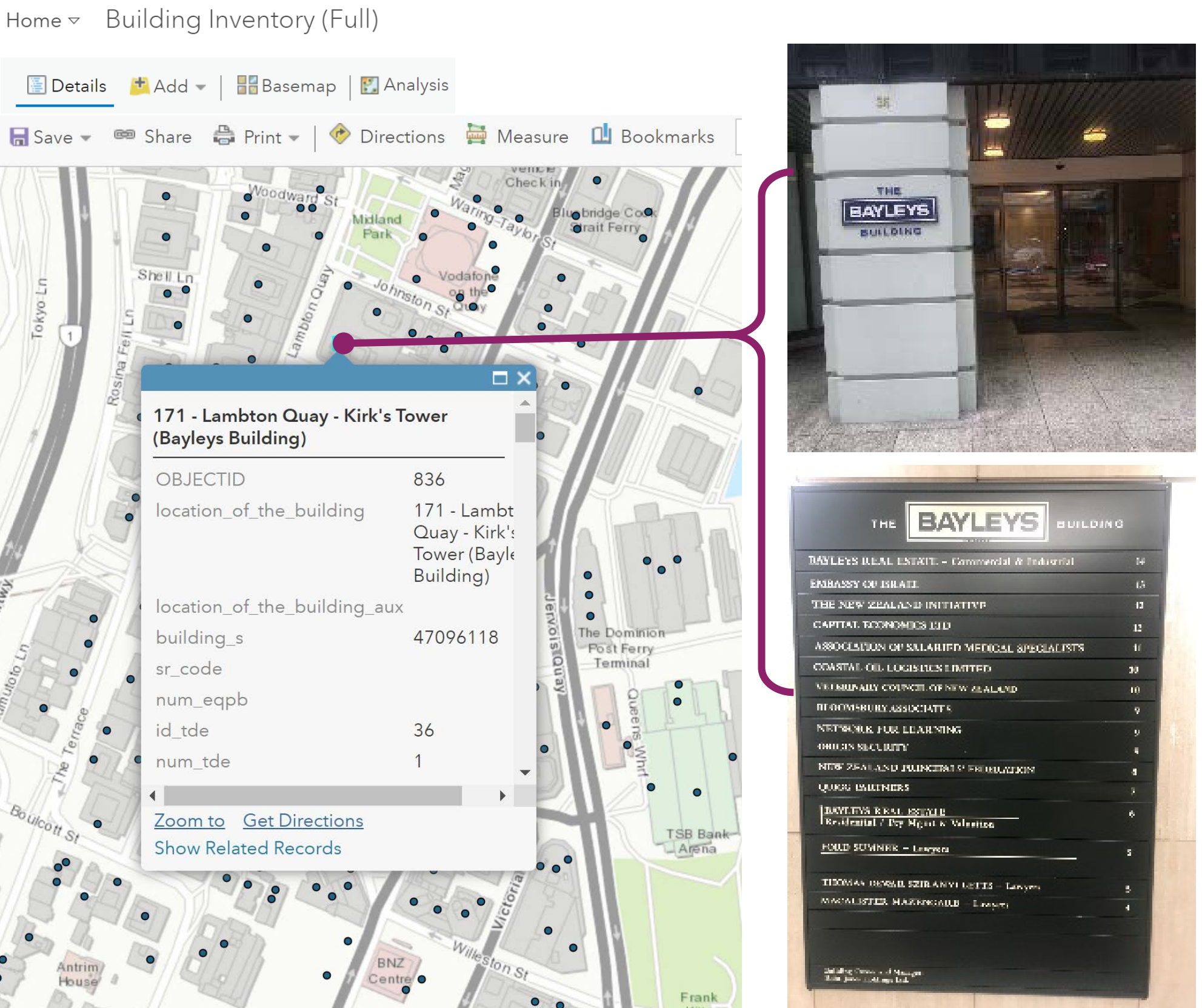
**HOW:** The inventory is developed from multiple datasets and vetted with a street survey. It is embedded within an online GIS viewer that allows approved users to access and visualise information directly on the viewer or to query and extract parts of the data inventoried to suit research needs.

**CONTRIBUTION:** The inventory enables research on: **Vulnerability** of concrete building components; Modelling **collapse risk**; **Cordoning**; **Prioritisation** of strengthening or demolitions of earthquake-vulnerable buildings; **Regulatory** solutions for addressing earthquake-vulnerable buildings

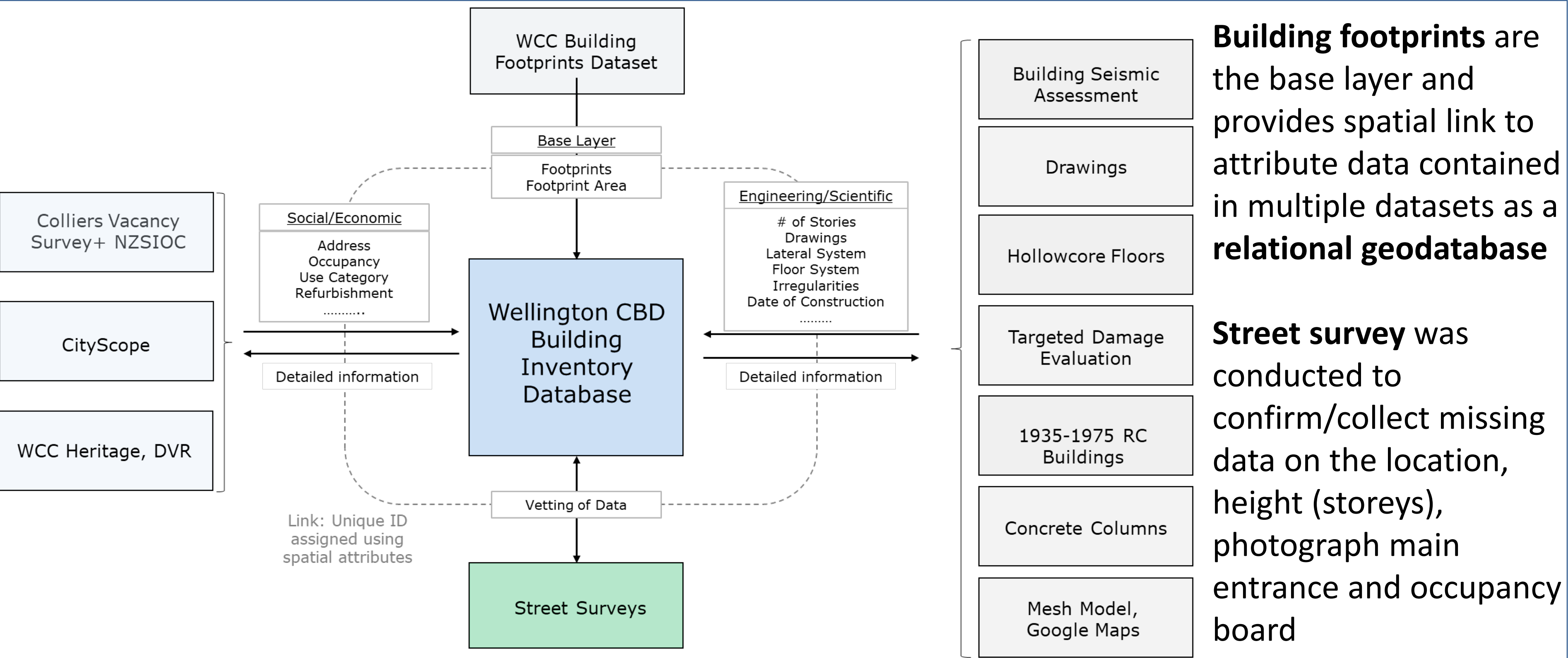


## Inventory Highlights

Spatial data is displayed in the online viewer. Users can download summary and source datasets to use for their own projects, including **drawings** and **photos** from street survey.



## Source Datasets



**Building footprints** are the base layer and provides spatial link to attribute data contained in multiple datasets as a **relational geodatabase**

**Street survey** was conducted to confirm/collect missing data on the location, height (storeys), photograph main entrance and occupancy board

Most common ground floor use is for **retailing** (including office and apartment buildings)

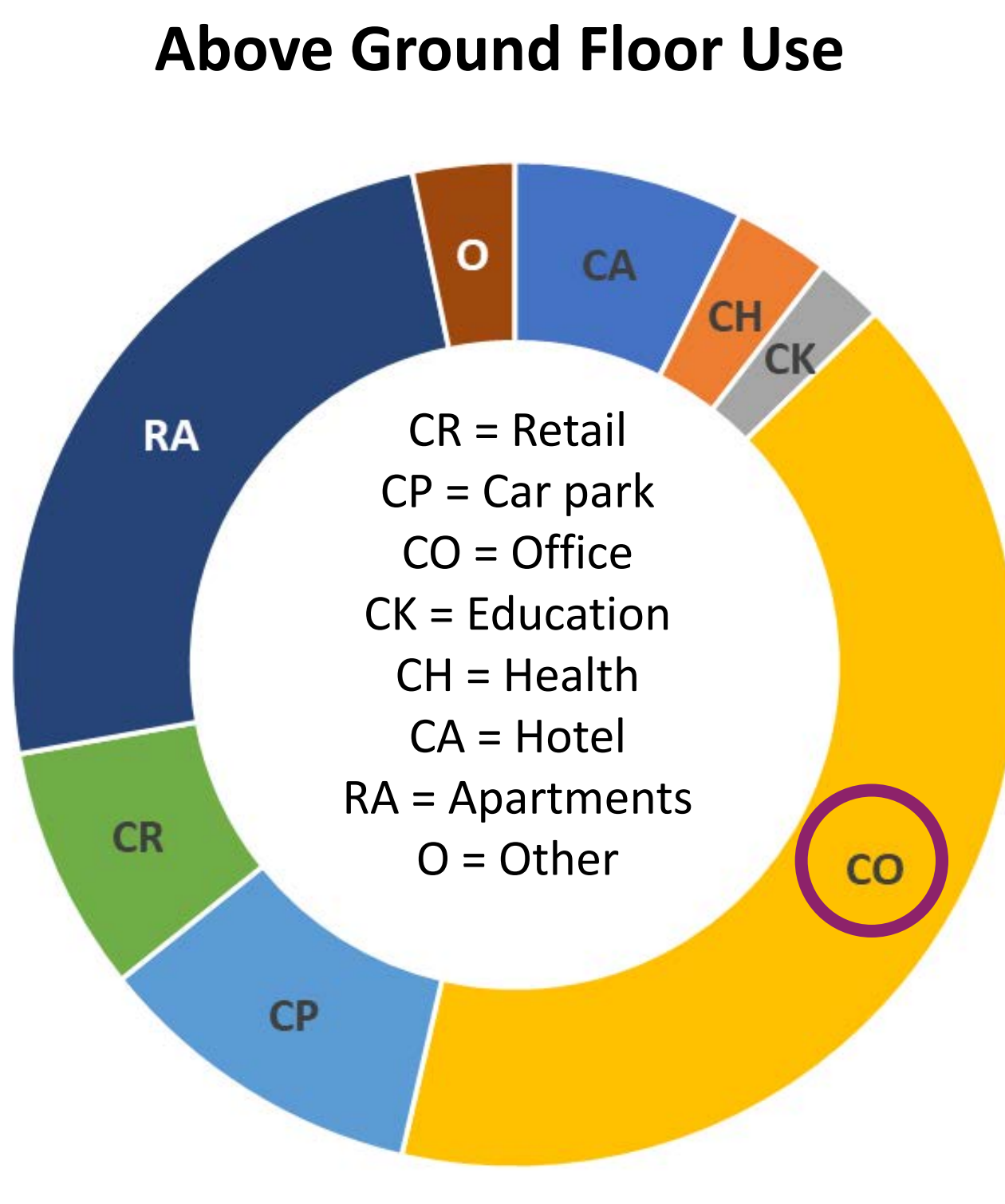
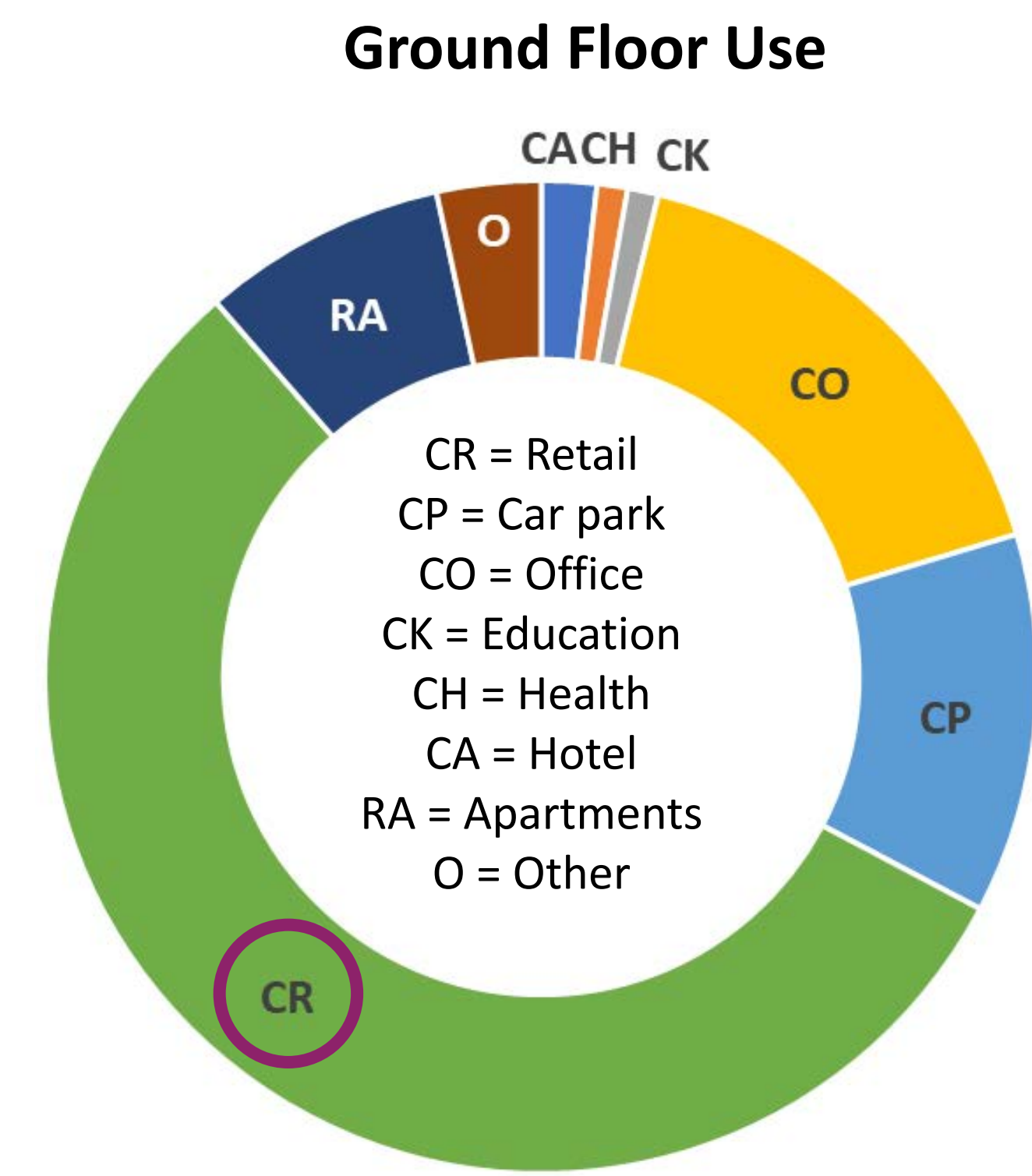
Majority of buildings are used as **offices**

Around **70** buildings occupied by central **government tenants**

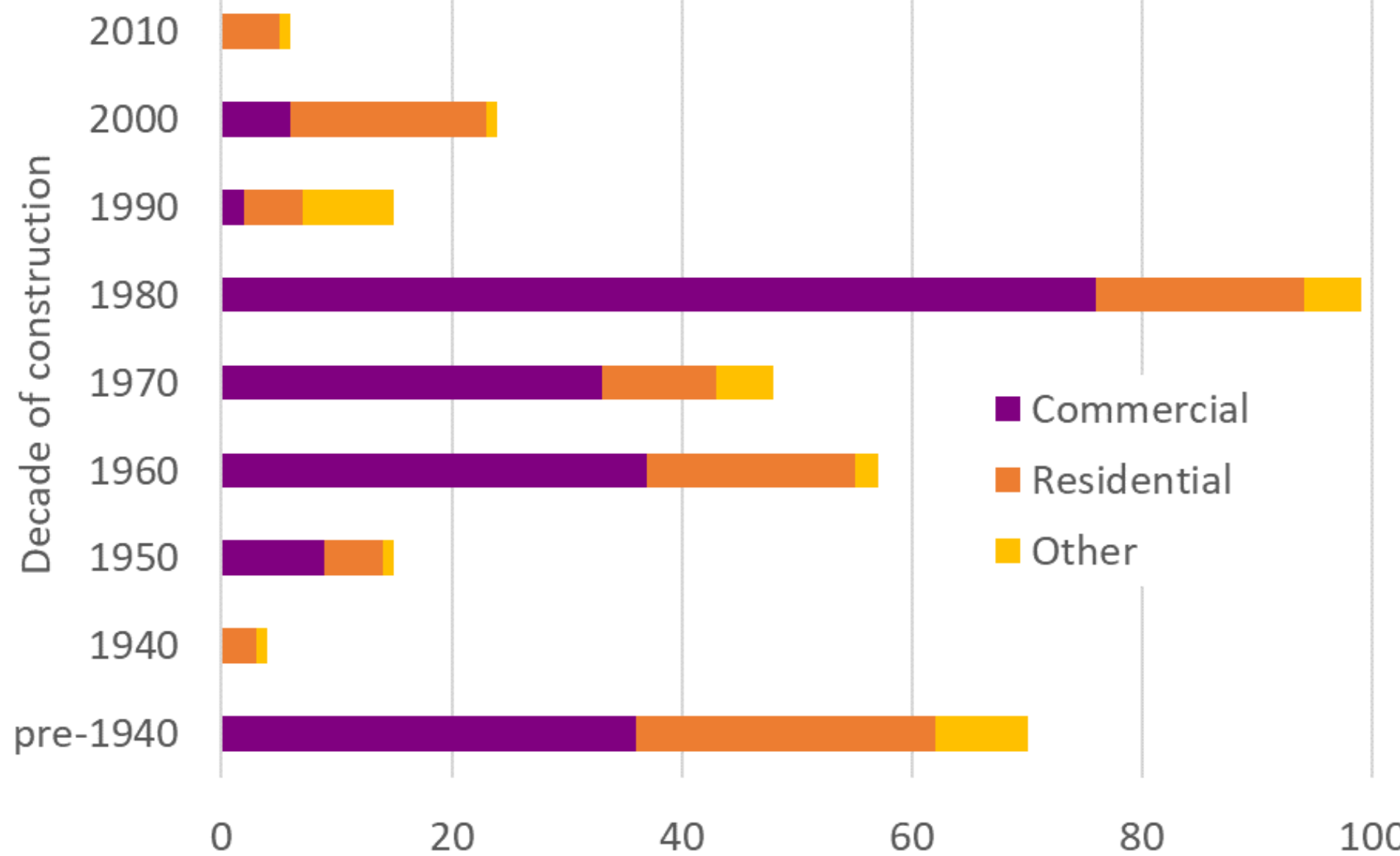
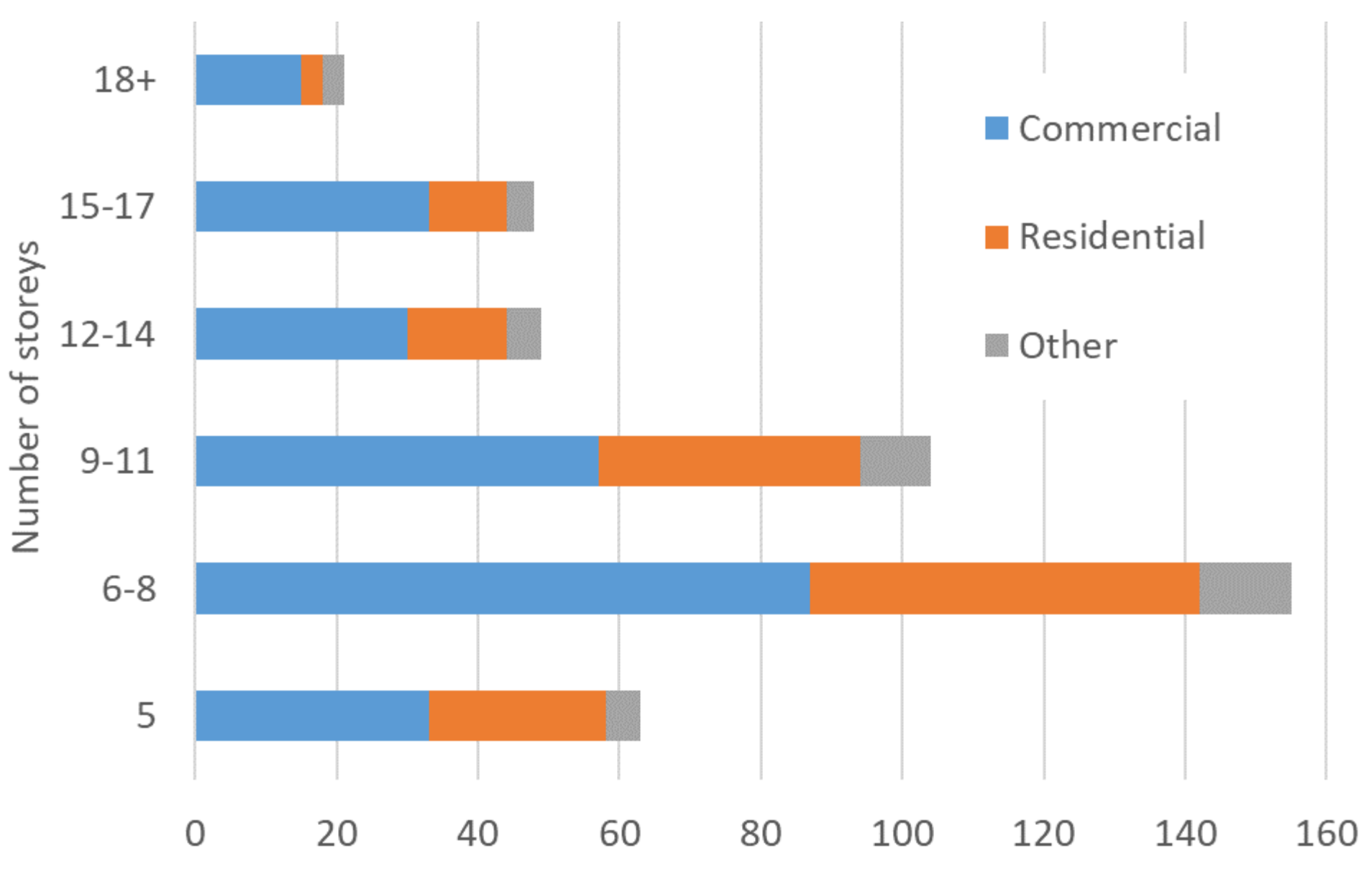
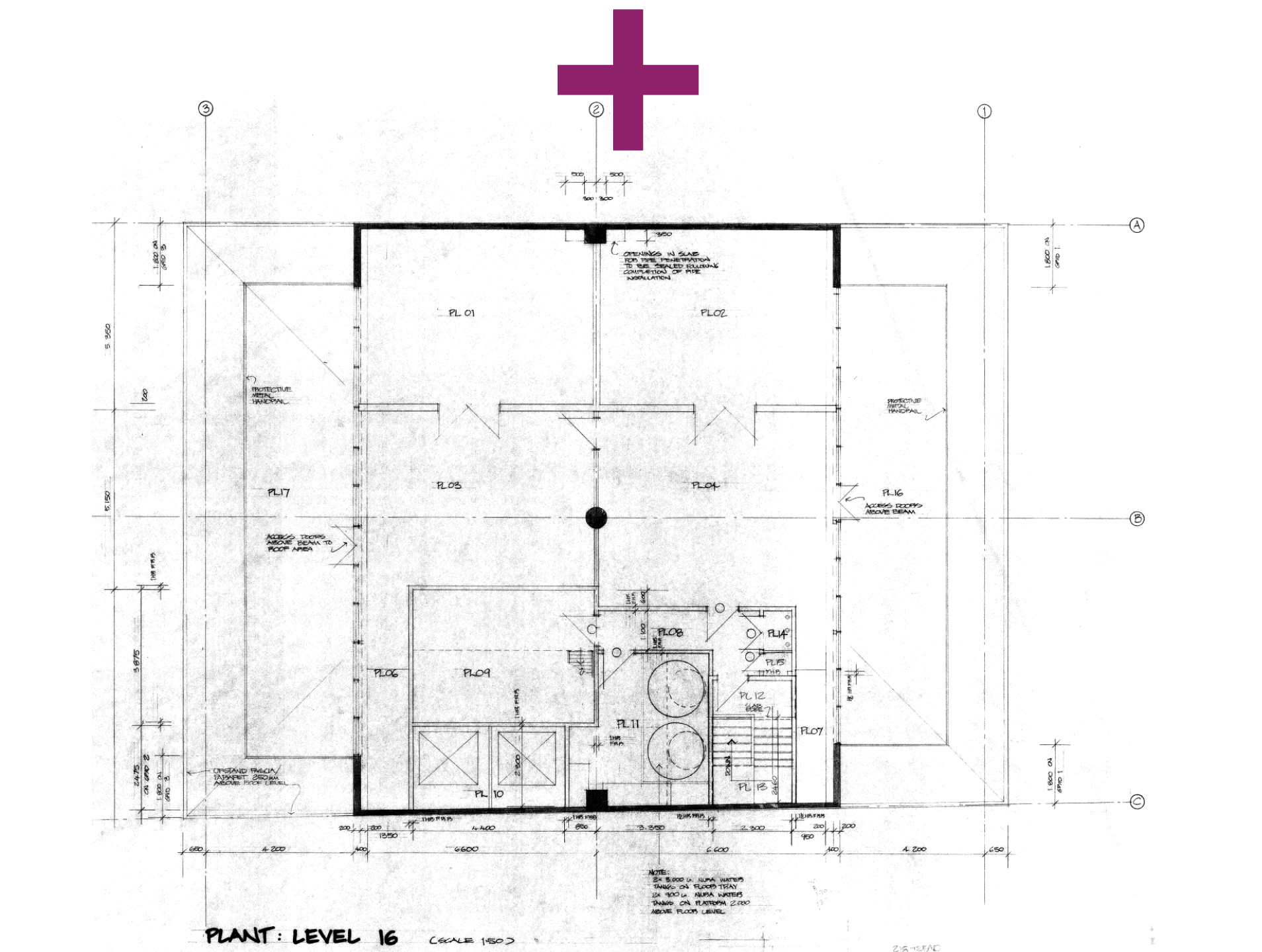
**2/3** of buildings in the database are between **5-10** storeys

**1/3** of buildings constructed in **1980's**

**Preliminary economic indicators**



percentile	10%	25%	50%	75%	90%
Building value (\$ per m2)	361	528	812	1,232	1,668
Land value (\$ per m2)	5,535	8,255	13,650	20,590	29,830



## Work in Progress

- Working with the Wellington City Council and TP3:**
- Sourcing remaining drawings (~200) and adding them to the viewer
  - Add building consents to track building changes
  - Improve user interface of the viewer
  - Develop metadata
  - Making building inventory dataset available to research groups

